

INFORMATION PAPER

MCHB-TS

March 3, 1998

SUBJECT: USACHPPM Capabilities and Responsibilities Regarding Chemical Agent Emergency Response, Reentry, Restoration, Remediation, Demilitarization , and Deployment

PURPOSE. To summarize the capabilities and responsibilities of the USACHPPM as it relates to the health and environmental concerns associated with chemical agents, specifically in relation to the specific areas of Emergency Response, Reentry, Restoration, Remediation, Demilitarization , and Deployment.

BACKGROUND.

a. Though no longer produced for military use, questions on how to manage chemical agents, their residues, and associated breakdown products/other contaminated waste items persist. In fact, a major mission of the Army today is devoted to establishing safe, effective means for destroying the existing chemical stockpiles as well as cleaning up non-stockpile sites and items. Some types of standards already in existence (such as soldier battlefield concentrations and worker air-concentration limits) are being reevaluated using modern risk assessment approaches. Several data gaps (such as in the area of low level, chronic environmental media exposures) have been clearly identified, however, and current initiatives are underway to establish policy and guidance.

b. The types of standards in question include toxicity criteria, environmental media (air, water, soil) control limits, monitoring and analytical procedures, respirator and PPE specifications, and storage and disposal requirements. Some Army activities/organizations that incorporate the use of such standards include the Army Material Command (AMC) (specifically the Chemical and Biological Defense Command (CBDCOM) and the depot-level chemical activities; and Program Manager for Chemical Demilitarization (PMCD); the Chemical Stockpile Emergency Preparedness Program (CSEPP); Project Manager for Non-Stockpile Chemical Materiel (PMNSCM) (for sites such as Formerly Used Defense Sites); as well as the Army's installation restoration (IR) and base closure cleanup activities, and unexploded munitions removal operations. In addition, Army doctrine describes essential concepts of such standards as it relates to medical/health impacts to the soldier.

c. The DA Steering Committee for Standards (SCS) for Emergency Response, Reentry, Restoration, Remediation, Demilitarization was established in July 1995 to provide a centralized effort by the Army to address specific data gaps and/limitations that limit the Army's ability to justifiably ensure that legitimate scientific and public concerns are adequately addressed. The SCS is chaired by the Deputy Assistant Secretary of the Army (DASA) for Environment, Safety, and Occupational Health (ESOH) Office of the Assistant Secretary of the Army (OASA), Installations, Logistics, and Environment (I,L&E). The SCS mission is to "identify, prioritize, and recommend establishment of critical standards for health, safety, environment, monitoring and personal protective equipment (PPE) that protects workers, the surrounding community, and the

environment for Army activities in emergency response, restoration, remediation, demilitarization, or treaty/agreement implementation and compliance.” The health/medical viewpoints and expertise for this group are addressed through OTSG. This is in accordance with Army regulation/policy (e.g. AR 200-1, Environmental Protection and Enhancement), which delineates that the OTSG is responsible for the development, approval and/or review of standards for military unique agents). Several other Army regulations, DA pamphlets, doctrine, and policies describe the role of the OTSG concerning medical/health issues associated with chemical agent. A listing of the primary documents is contained as Attachment 1. The USACHPPM has historically provided much direct technical support to the OTSG on chemical agent health issues and as such, represent the OTSG on the SCS and associated Working Group.

d. The USACHPPM’s matrixed expertise in the areas of Toxicology, Occupational and Environmental Medicine, Environmental Science and Engineering, Risk Assessment, Industrial Hygiene, and Laboratory Sciences lends itself to assisting the Army and the Office of the Surgeon General (OTSG) in achieving the most scientifically defensible health/environmental standards for chemical agents. The Center’s recently established Chemical Agent Standards Working Group (CASWG) is designed to further facilitate intra-organizational review and awareness on a variety of projects and initiatives relating to chemical agents. The individuals participating in the CASWG, therefore, continue to broaden their expertise, which in turn enhances the quality of service and products that are provided to the OTSG and the Army.

e. The USACHPPM also represents the Army medical community/OTSG on other working groups and committees dealing with chemical agent issues. Specifically, the USACHPPM participates in the Army’s Chemical Agent Safety and Health Action Committee (CASHPAC) which establishes specific safety procedures and practices for the Army’s chemical agent activities.

f. Recently, significant attention has also been placed on aspects of force protection and preventive medicine to our troops with specific emphasis on Nuclear, Biological, and Chemical (NBC) medical and environmental issues. Advanced concepts and closer scrutiny of the adequacy of existing standards and procedures is being directed through various Army channels to include the Army medical community and the OTSG. Specific funding allocations through OTSG have been provided to organizations such as USACHPPM to address specific data gaps in the NBC arena. The USACHPPM has designated a specific internal Med-NBC Committee to coordinate internal projects and ensure better quality products as well as to help define Med-NBC (Environmental) requirements. The specific chemical agent issues are also tied into the CHPPM CASWG, again to ensure sound, consistent technical products.

SCOPE

a. The scope of the responsibilities and assistance capabilities of the USACHPPM regarding chemical agents is quite broad. But in general, the CHPPM serves as a consultative organization as opposed to a direct, active response organization. The USACHPPM provides direct consultative support on individual projects for specific organizations and also participates as a reviewer/developer of technical guidance and policy. Though the USACHPPM is not a policy -

making organization, it makes recommendations through the OTSG/medical channels when specific policy development or modifications are deemed necessary to protect public/military health.

b. There are several scenarios/applications of standards and guidelines (e.g. emergency response vs reentry vs. chemical agent demilitarization) each for which there are a variety of requirements to be determined (e.g. PPE, concentration criteria, toxicological effects doses of concern, etc). The USACHPPM and its internal system of working groups is designed to ensure that there is sound, consistent technical basis to all the standards and procedures used, and to provide the service of more specifically identifying the most appropriate application for specific circumstances.

SPECIFIC SERVICES

a. The Table below demonstrates the broad range of services in terms of scenario applications and technical issues.

USACHPPM Capabilities and Responsibilities for Chemical Agent Emergency Response, Reentry, Restoration, Remediation, Demilitarization , and Deployment					
<i>technical services provided</i>	<i>Emergency Response</i>	<i>Reentry</i>	<i>Restoration & Remediation</i>	<i>Demilitarization</i>	<i>Deployment</i>
toxicity evaluations (*consultative)	X	X	X	X	X
environmental media levels (* development and consultative)	X	X	X	X	X
site specific environmental risk assessments (*perform, review, and approve)			X	X	X
Worker Protection/PPE requirements (*consultative; development)	X	X	X	X	
Laboratory /Analytical Methods (*consultative? Development??)			X	X	X
Waste management (*consultative)			X	X	

b. A specific listing of some recent chemical agent-related projects and services performed by components of the USACHPPM groups by technical issues is provided as Attachment 2.

ADDITIONAL INFORMATION

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ATTACHMENT 1.

Listing of primary 'requirements' documents for CHPPM/OTSG for chemical agent issues

AR 385-61, The Chemical Agent Safety Program DA Pam 385-61 Toxic Chemical Agent Standards AR 50-6 Chemical Surety
DA Pam-50-6 Chemical Agent Accident or Incident Response and Assistance
AR 40-5 Preventive Medicine
AR 200-1 Environmental Protection and Enhancement
DA Pam 40-578 Risk Assessment for Installation Restoration and Formerly Used Defense Sites
DA Pam 40-173 Occupational Health Guidelines for the Evaluation and Control of Occupational Exposure to Mustard Agents H, HD, HT
MEDCOM Pamphlet 40-3 Medical Services Environmental Health Program TB Med 577
Sanitary Control and Surveillance of Field Water Supplies
DA Memorandum, subject: Interim Guidance for Biological Warfare Materiel (BWM) and Non-Stockpile Chemical Warfare Materiel (CWM) Response Activities
385-64 Ammunition and Explosives Safety
FM 3-9 Potential Military Chemical /Biological Agent and Compounds DA Pam 40-8

ATTACHMENT 2

Listing of example projects and initiatives by USACHPPM regarding Chemical Agent health issues.

CHEMICAL DEMILITARIZATION

(Primary Programs 39, 42, 32) Also programs 87, 64

Incinerators:

Emissions Modeling and Health Risk Assessments for RCRA Part B Permits
(P-39 & P-42)

- 1) *Anniston Chemical Depot, AL*- received permit in June; construction will be followed by trial burns and new risk assessment with trial burn data
- 2) *Pine Bluff Arsenal, ARK*- protocol for multi-pathway risk assessment drafted
- 3) *Pueblo Chemical Depot, CO* -

Alternate Technology (Neutrilization):

- 1) *APG, MD* - P-32 is reviewing wastewater permit and aquatic toxicity testing
- 2) *Newport Chemical Depot, IN* - P-32 is preparing wastewater permit and reviewing aquatic toxicity testing; P-39 with P-32 and P-42 is developing a document that assesses the overall risks associated with the neutrilization /demil process

CHEMICAL STOCKPILE EMERGENCY PREPAREDNESS PROGRAM (CSEPP)

(P-37 and P-39)

- 1) Reentry and Restoration Plans for event of release
- 2) after-emergency phase sampling plans (Pine Bluff)

SOLDIER AND FIELD OPERATIONS SUPPORT

- 1) Soldier Exposure Criteria Tech Guides (P-39 plus multi)
- 2) Soldier Decrements documents (HD complete) (SA)
- 3) NBC Medical Officer Battlebook – to assist the NBC officer with field expedient decision-making and some operational procedures (based on current doctrine)

HEALTH/SAFETY ENVIRONMENTAL MEDIA STANDARDS and TOX STDS

- 1) Chronic Toxicological Criteria - Reference Doses (SA and P-39) – endorsed by OTSG, under review by COT
- 2) Chemical Agent Health Criteria (air stds review for worker and GPL), MOU with ERDEC (SA and P-87, P-39); G-document drafted
- 3) Environmental Screening Levels document by ORNL – proposes various environmental “clean-up” levels for soil and water; use

LABORATORY SUPPORT

{multiple projects}

PERSONAL PROTECTIVE CLOTHING/RESPIRATORS/ENGINEERING CONTROLS
(P-56)

{CASHPAC participation}
{personal air monitoring project}

WASTE MANAGEMENT:

LDR - health -based disposal concentrations and management for Utah initiative

GENERAL:

- 1) TG 204 Glossary of (Chem Agent) Terms (SA)
- 2) TG 218 Detailed and General Facts About Chemical Agents

DOCTRINE ISSUES:

ESOs
PMs
NBC Medical Officers

CHPPM Chemical Agent Standards Working Group (CASWG)
CHEMICAL AGENT STANDARD DEVELOPMENT AND CONSULTATIVE SERVICES

SOME EXAMPLES OF INITIATIVES/PROJECTS/PRODUCTS(*)

- 1) General matrixed consultative services and document reviews regarding various chemical agent health issues
- 2) Development of variety of general technical materials/references (TG 204 “Chemical Agent Glossary of Terms”, “TG 218 Detailed and General Facts about Agents”, “Health and Environmental Chemical Agents Projects (HECAP) matrix”)
- 3) Participation/Input to Army Policy (ex: Interim guidance for Biological Warfare Materiel (BWM) and Non-Stockpile Chemical Warfare Materiel (CWM) Response Activities)
- 4) **Review/development of key Toxicological Data/Studies/Reports**
 - **development of low-level toxicological standards for agents as well as breakdown products***
 - **development/review of existing soldier, (depot) worker, and general population chemical agent air criteria standards and guidelines**
 - **demonstrating advanced modelling approaches to enhancing existing**

toxicological data to minimize need for extensive toxicological tests

*** Key product: OTSG endorsed “ Interim Chronic Toxicological**

5) Review/development of Risk Assessment-related documents:

- **Example: * draft document “ Exposure Assessment and Derivation of Environmental Screening Levels for Chemical Agents” (provides ‘pre-established’ ‘safe’ low level soil and water screening levels to eliminate need for ‘clean to “ O” detection”**
- **Development of environmental media chemical exposure criteria for the deployed soldier (2 Tech Guides - first draft: TG 230 Soldier Exposure Guidelines for Short Term Exposures; second draft is for long term exposures)**
- **Alternate 3X and 5X criteria – establishment of health-based concentration criteria for solid and liquid wastes to manage and-or dispose of chemical agent-related waste in safe and cost-effective (requested directly by DA)**

6) Support of CSEPP program particularly for Reentry and Restoration Phase (‘after-emergency phase” phase) :

- **technical consults**
- **development of general reentry/restoration guidance materials**
- **training/workshops on reentry restoration phase issues and provision of guidance materials**
- **development of specific technical document such as “Sampling Protocol for Chemical Agent Reentry /Restoration”**
- **formal and informal presentations of pertinent update information to CSEPP audiences**